# CODEX STANDARD FOR QUICK FROZEN RAW SQUID

CODEX STAN 191 - 1995

## 1. SCOPE

This standard applies to quick frozen raw squid and parts of raw squid, as defined below and offered for direct consumption without further processing. It does not apply to products indicated as intended for further processing or for other industrial purpose.

## 2. DESCRIPTION

### 2.1 Product Definition

Quick frozen squid and parts of squid are obtained from squid species of the following families:

(i) *Loliginidae*
(ii) *Ommastrephidae*.

### 2.2 Process Definition

The product after any suitable preparation shall be subjected to a freezing process and shall comply with the conditions laid down hereafter. The freezing process shall be carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and distribution.

Industrial repacking of intermediate quick frozen material under controlled conditions which maintain the quality of the product, followed by the reapplication of the quick freezing process as defined above is permitted.

Quick frozen squid and parts of squid shall be processed and packaged so as to minimize dehydration and oxidation.

### 2.3 Presentation

Any presentation of the product shall be permitted provided that it:

(i) meets all the requirements of this standard, and

(ii) is adequately described on the label to avoid confusing or misleading the consumer.

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 Squid

Quick frozen squid shall be prepared from sound squid which are of a quality fit to be sold fresh for human consumption.

### 3.2 Glazing

If glazed, the water used for glazing or preparing glazing solutions shall be of potable quality or shall be clean sea-water. Potable water is fresh-water fit for human consumption. Standards of potability shall not be less than those contained in the latest edition of the WHO "International Guidelines for Drinking Water Quality". Clean sea-water is sea-water which meets the same microbiological standards as potable water and is free from objectionable substances.

### 3.3 Final Product

Products shall meet the reguirements of this standard when lots examined in accordance with Section 9 comply with the provisions set out in Section 8. Products shall be examined by the methods given in Section 7.

## 4. FOOD ADDITIVES

No food additives are permitted in these products.

## 5. HYGIENE AND HANDLING

5.1 The final product shall be free from any foreign material that poses a threat to human health.

5.2 When tested by appropriate methods of sampling and examination prescribed by the Codex Alimentarius Commission , the product:

(i) shall be free from microorganisms or substances originating from microorganisms in amounts which may present a hazard to health in accordance with standards established by the CAC; and

(ii) shall not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission.

5.3 It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969) and the following relevant Codes:

(i) the Recommended International Code of Practice for Frozen Fish (CAC/RCP 16-1978);

(ii) The Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods (CAC/RCP 8-1976);

(iii) the Recommended International Code of Practice for Cephalopods (CAC/RCP 37-1989).

## 6. LABELLING

In addition to the provisions of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985) the following specific provisions apply:

### 6.1 The Name of The Food

6.1.1 The name of the product shall be "squid", or another name according to the law, custom or practice in the country in which the product is to be distributed.

6.1.2 There shall appear on the label reference to the presentation, in close proximity to the name of the food in such additional words or phrases that will avoid misleading or confusing the consumer.

6.1.3 In addition, the labelling shall show the term "frozen", or "quick frozen" whichever is customarily used in the country in which the product is distributed, to describe a product subjected to the freezing process described in sub-section 2.2.

6.1.4 The label shall state that the product should be maintained under conditions that will maintain the quality during transportation, storage and distribution.

6.1.5 If the product has been glazed with sea-water, a statement to this effect shall be made.

### 6.2 Net Contents (Glazed Products)

Where the food has been glazed, the declaration of net contents of the food shall be exclusive of the glaze.

### 6.3 Storage Instructions

The label shall include terms to indicate that the product shall be stored at a temperature of -18°C or colder.

### 6.4 Labelling of Non-Retail Containers

Information specified above shall be given either on the container or in accompanying documents, except that the name of the food, lot identification, and the name and address of the manufacturer or packer as well as storage instructions shall always appear on the container.

However, lot identification, and the name and address may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

## 7. SAMPLING, EXAMINATION AND ANALYSES

### 7.1 Sampling

7.1.1 Sampling of lots for examination of the product shall be in accordance with an appropiate sampling plan with an AQL of 6.5. Sampling of lots composed of blocks shall be in accordance with the sampling plan developed for quick frozen fish blocks (reference to be provided). The sample unit is the primary container or for individually quick frozen products is at least 1 kg portion of the sample unit.

7.1.2 Sampling of lots for examination of net weight shall be carried out in accordance with an appropriate sampling plan meeting the criteria established by the CAC.

### 7.2 Sensory and Physical Examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with procedures elaborated in Sections 7.3 through 7.5, Annex A and the *Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31 - 1999).*

### 7.3 Determination of Net Weight

7.3.1 Determination of Net Weight of Product not Covered by Glaze

The net weight (exclusive of packaging material) of each sample unit representing a lot shall be determined in the frozen state.

7.3.2 Determination of Net Weight of Products Covered by Glaze

(to be elaborated)

### 7.4 Procedure for Thawing

The sample unit is thawed by enclosing it in a film-type bag and immersing in water at room temperature (not higher than 35°C). The complete thawing of the product is determined by gently squeezing the bag occasionally so as not to damage the texture of the squid until no hard core of ice crystals are left.

### 7.5 Cooking Methods

The following procedures are based on heating the product to an internal temperature of 65-70°C. Cooking times vary according to the size of the product and the temperatures used. The exact times and conditions of cooking for the product should be determined by prior experimentation.

Baking Procedure: Wrap the product in aluminum foil and place it evenly on a flat cookie sheet or shallow flat pan.

Steaming Procedure: Wrap the product in aluminum foil and place it on a wire rack suspended over boiling water in a covered container.

Boil-In-Bag Procedure: Place the product into a boilable film-type pouch and seal. Immerse the

pouch into boiling water and cook.

Microwave Procedure: Enclose the product in a container suitable for microwave cooking. If plastic bags are used, check to ensure that no odour is imparted from the plastic bags. Cook according to equipment instructions.

## 8. DEFINTION OF DEFECTIVES

The sample unit shall be considered defective when it exhibit any of the properties defined below.

### 8.1 Deep Dehydration

Greater than 10% of the surface area of the sample unit exhibits excessive loss of moisture clearly shown as white or yellow abnormality on the surface which masks the colour of the flesh and penetrates below the surface, and cannot be easily removed by scraping with a knife or other sharp instrument without unduly affecting the appearance of the squid.

### 8.2 Foreign Matter

The presence in the sample unit of any matter which has not been derived from squid (excluding packing material), does not pose a threat to human health, and is readily recognized without magnification or is present at a level determined by any method including magnification that indicates non-compliance with good manufacturing and sanitation practices.

### 8.3 Odour and Flavour

A sample unit affected by persistent and distinct objectional odours or flavours indicative of decomposition, which may be characterized also by light pinkish to red colour.

### 8.5 Texture

Textural breakdown of the flesh, indicative of decomposition, characterized by muscle structure which is mushy or paste-like.

## 9. LOT ACCEPTANCE

A lot shall be considered as meeting the requirements of this standard when:

(i) the total number of defectives as classified according to Section 8 does not exceed the acceptance number (c) of an appropriate sampling plan with an AQL of 6.5;

(ii) the average net weight of all sample units is not less than the declared weight, provided there is no unreasonable shortage in any container;

(iii) the Food Additives, Hygiene and Labelling requirements of Sections 4, 5.1, 5.2 and 6 are met.

## "ANNEX A"

## SENSORY AND PHYSICAL EXAMINATION

1. Complete net weight determination, according to defined procedures in Section 7.3 (de-glaze as required).

2. Examine the frozen squid for the presence of deep dehydration by measuring those areas which can only be removed with a knife or other sharp instrument. Measure the total surface area of the sample unit, and determine the percentage affected using the following formula;

   $$\frac{\text{area affected}}{\text{total surface area}} \times 100\% = \%\ \text{affected by deep dehydration}$$

3. Thaw and individually examine each squid in the sample unit for the presence of foreign matter and colour.

4. Examine each squid using the criteria outlined in Section 8. Flesh odours are examined by making a cut parallel to the surface of the flesh so that the exposed surface can be evaluated.

5. In cases where a final decision on odour and texture can not be made in the thawed uncooked state, a portion of the sample unit is sectioned off and the odour, flavour and texture confirmed without delay by using one of the cooking methods defined in Section 7.5.